

TITLE OF INVENTION

HANDLED CONTAINER

RELATED APPLICATIONS

5 Not Applicable

FIELD OF INVENTION

[0001] This invention relates to containers, particularly containers formed from paperboard, laminates including paperboard, or polymeric materials (commonly laminates of differing polymeric materials).

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BACKGROUND OF INVENTION

[0002] The common "gable-top" container for food products, and other pourable products, provides a top which is readily opened for the discharge of the container contents. Gable-top containers commonly include at least two top outer
15 exposed panels whose body portions define the characteristic "gable" on the top end of the container and whose distal edges are bonded to define a fin which is readily openable to expose substantially the entire cross sectional area of the top opening of the container for the removal of the contents through such opening.

20 **[0003]** The afore described container design has long been considered very desirable for containing pourable products. Of recent, this container has been modified to provide a pouring spout disposed within the bounds of one of the top outer panels. This spout desirably limits the outflow of liquid, for example, from the container and is provided with outer threads for the receipt of a closure cap
25 thereon. This structure continues to gain popularity in part because of the ease of opening and closing of the container.

[0004] In each of these prior art containers, the body of the container is tubular in form. To lift the container for whatever reason requires that one grasp the container about its middle with one or both hands. If both hands are used to lift the container, the cap closing the pouring spout must be removed before the container is lifted and tilted to pour from it. If only one hand is used to lift the container, a second hand may be used to remove the cap, but only at the risk of the container inadvertently tilting while held in a single hand, and resultant accidental spilling of the container contents.

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[0005] Handles placed on the exterior sides of the common gable-top container are most undesirable due to problems associated with packing of the containers in shipping cartons, stacking the containers on shelves in retail stores, and the ever-present tendency of the handles on the side to be damaged in handling, transporting, etc. Very importantly, handles on the sides of the containers preclude the use of currently existing, and very expensive, machines employed in erecting blanks into tubular containers, and filling the containers with product, for example.

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SUMMARY OF INVENTION

[0006] In accordance with one aspect of the present invention, the present inventor provides a gable top container with a handle which resides within the bounds of the footprint of the container while further providing also for the placement of a pouring spout on the top end of the container. In accordance with a further aspect of the invention, the container is formed from a flat blank of a paperboard-containing material having foldable panels which, when folded, define the gable top of the container, one of the two major panels of the defined top being larger than the second of these major panels and further being oriented at an angle with respect to the vertical which is different from the angle of orientation of the

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second major panel. In the present container, the pouring spout is disposed on the second (smaller) major panel and the handle is disposed on the larger of the two major panels. The handle of the present container may be anchored at its opposite ends to the partially or fully erected container. In one embodiment, the handle
5 includes a planar base which is disposed internally of the container with the handle projected outside the container via an opening through the major planar panel of the gable top of the container.

BRIEF DESCRIPTION OF THE FIGURES

10 **[0007]** Figure 1 is a perspective view of a handled container embodying various of the features of the present invention;

Figure 2 is a side elevational view of the left side of the container depicted in Figure 1;

15 Figure 3 is a side elevational view of the handle-bearing side of the container depicted in Figure 1;

Figure 4 is a side elevational view of the pouring spout side of the container depicted in Figure 1;

Figure 5 is a top view of the container depicted in Figure 1;

Figure 6 is a bottom view of the container depicted in Figure 1;

20 Figure 7 is a perspective view of one embodiment of a handle suitable for use with the container depicted in Figure 1;

Figure 8 is a perspective view of a further embodiment of a handle suitable for use with the container depicted in Figure 1;

25 Figure 9 is a perspective view of a gable top container embodying various of the features of the present invention and depicting, in phantom, an imaginary space within which a handle of the present invention is mounted;

Figure 10 is a perspective view of a gable top container embodying various of the features of the present invention and depicting, in phantom, an alternative embodiment of the imaginary space within which a handle of the present invention is mounted;

5 Figures 11A, 11B, 11C, 11D, 11E, and 11F are perspective views of alternative embodiments of a handle suitable for use with the container depicted in Figure 1;

Figure 12 is a laid-out view of a blank suitable for the formation of a container as depicted in Figure 1;

10 Figure 13 is a perspective view of a gable top container embodying various of the features of the present invention and depicting an alternative embodiment of a handle having a base which is affixed to the top end of the container;

Figure 14 is a perspective view of the handle and base depicted in Figure 13; and,

15 Figure 15 is a sectional view taken generally along the line 15-15 of Figure 13.

DETAILED DESCRIPTION OF INVENTION

[0008] With reference to Figure 1, in accordance with one aspect of the present invention, there is provided a container 10, which in the depicted
20 embodiment, is of generally rectangular overall geometry aside from its top end 12. The top end 12 of the depicted container is defined by a plurality of folded panels, including a major panel 14 and a minor panel 16 which cooperatively define the outer (top) surface 18 of a gable top 20 of the container. In the depicted
embodiment, the container includes a pour spout 22 associated with the minor
25 panel and a handle 24 of the present invention associated with the major panel.

[0009] Referring to Figures 1, 2 and 9, in accordance with the present invention, there is provided an imaginary space 30 indicated by the dashed lines of Figure 2 and 9, within which the handle 24 of the present invention may be located. This imaginary space 30 is defined on the bottom thereof by the plane of the major panel 14 of the gable top 20 of the container, and on the side walls thereof by imaginary extensions 32, 34, 36 of the side walls 38, 40, 42, respectively, and on its top wall an imaginary plane 44 projecting from the top edge 41 of the fin 48 in a direction normal to the centerline 46 of the container. This imaginary plane 44 defines the top of the imaginary space and is intersected by the imaginary extensions 32, 34, and 36 of the side walls. As depicted in a plan view such as Figure 2, this imaginary space is of generally a truncated triangular cross-section, the apex 46, of the space being parallel to, and coextensive with the top edge 41 of the fin 48 defined at the joiner of the adjacent side margins 50, 56 of the minor and major panels 14, 16 of the gable top. Thus, the space increases in depth from the fin to the juncture 54 thereof with the extension 34 of the side wall 40, thereby providing for space for a handle 24. In the embodiment depicted in Figure 9, the handle includes first and second ends 56, 58 respectively, the first end 56 thereof being anchored to the major panel (or to the major panel and/or the fin), and the second end 58 being anchored to the major panel adjacent the junction 60 of the side edge of the major panel with the top edge of the side wall 40 of the container. It will be recognized that the apex 46 of the imaginary triangular space is depicted as terminated along the top edges of the fin so that the actual cross section of this depicted imaginary triangular space is truncated at its apex, but alternatively the imaginary plane 44 may terminate at the fold line 43 between the major panel 14 and the fin 48, thus creating an imaginary space which is more truly triangular in cross section when viewed in a plan view. This latter embodiment is depicted in Figure 10 wherein like parts as found in Figures 2 and 9 are identified by primed numerals.

[0010] Notably, the handle of the present invention is of a design which will not extend beyond the extended side 34 of the container nor will it project higher

than the top edge of the common sealing fin 48 found on a gable-top container. Neither does the handle project materially laterally beyond the footprint 70 of the container, such footprint being defined by the area of the bottom 120 of the container as depicted in Figure 6. Accordingly, the handled container of the
5 present invention does not require any greater or non-conventionally shaped, storage space within a shipping case containing a plurality of containers, nor any greater or non-conventional display space in a retail establishment. Very importantly, the present container may be constructed from a blank employing existing conventional machinery. Moreover, it will be recognized by one skilled in
10 the art that the usable internal volume of the handled container may be adjusted merely by lengthening or shortening the height of the container.

[0011] As depicted in Figures 1, 7, 8, and 9, the handle may assume a curved geometry or may be multi-segmented from end to end thereof. In any event,
15 the arch of the handle shall not cause any material portion of the handle to project beyond the plane 44, nor materially laterally outwardly beyond the extensions of the side walls 38, 40 and 42. In a preferred embodiment, the handle is wholly within the footprint 70 of the bottom of the container. As so positioned, the handle defines an opening 71 between the handle and the planar major panel through
20 which at least multiple fingers, and preferably all four fingers of a user's hand may pass to permit grasping and manipulation of the container (See Figures 7 and 8)).

[0012] The handle of the present invention may be formed as a solid member of a circular, semi-circular, oval, or other suitable cross-section, as desired.
25 Alternative cross-sections for a suitable handle are depicted in Figures 11A-11F wherein it may be seen that the cross-section of the handle may be of an "H" cross-section with the web 74 of the "H" being oriented generally normal to the plane of the major planar panel (Figure 11F). Or, the handle may comprise a central elongated core 76 with a plurality of discs 78 defined along the length of
30 the core and in spaced apart relationship to one another, the discs being oriented

substantially normal to the length of the core 76, as is depicted in Figure 11A-11D. This basic design of the handled may be modified to include modifications, such as alternating ribs 80 and grooves 82 in the outer periphery 88 of the discs such as the grooves depicted in Figure 11B which define aberrations in the outer circumferential surface of one or more of the discs. The number of ribs and grooves further may be altered or they may be positioned at different locations about the periphery of the discs to give several other suitable cross-sections for the handle (Figure 11C and 11 D, for example). Still further, the cross-section of the handle may be of an "T" geometry, with the leg 86 of the "T" directed outwardly of the handle. Further, the weight of a filled container may dictate a handle having a minimum strength, thereby being an indicator of what material or geometrical cross section would be acceptable for forming the handle. Other suitable geometrical configurations of the handle will be recognized by one skilled in the art, given the present disclosure.

[0013] As desired, the handle may be of injection-molded plastic, or of a laminate of polymeric material, with or without the inclusion of paperboard as a part thereof. Preferably, the handle is formed from a plastic such as LDPE, HDPE, PP, OR MDPE.

[0014] Attachment of the opposite ends of the handle to the container is largely dependent upon the material from which the handle is formed. Ultrasonic welding may be suitable for certain plastics, while other materials of construction of the handle will be more suitably attached to the container by an adhesive. Again, depending upon the material of construction of the container and/or the handle, the handle may be integrally formed with the major panel of the gable top of the container.

[0015] With reference to Figure 12, a suitable blank 100 for the formation of one embodiment of a container of the present invention, includes first 102, second 104, third 106, fourth 108, and fifth 109 side panels which are disposed in side-by-side relationship to one another and defined by fold lines 110, 112, 114 and 116. In the depicted blank, the bottom 120 of the container is formed from a plurality of panels 122, 124, 126 & 130, each of which is integral with its respective side panel, but defined by respective fold lines 132, 134, 136 & 140. Further, the individual ones of these panels are integrally formed with adjacent panels as by fold lines 142, 144, 146 & 148. The second and fourth panels 124, 128 are divided by fold lines 150, 152, 154 & 156 into triangular portions suitable for forming the common gusset folds found in conventional gable top containers.

[0016] The top end of the first side panel 102 is provided with a planar panel 160, integrally formed with the first side panel along a fold line 162. The third side panel 106 is likewise provided with a planar panel 164 which is integrally formed with the third side panel 106 along a fold line 164. Notably, the fold line for the first planar panel is disposed inwardly of the top end 168 of the blank by a distance between about 30% and 40% farther than the location of the fold line 166 between the third planar panel and the top end of the third side panel. The planar panels 160, 164 are of substantially equal length so that the aforescribed locations of their respective fold lines relative to the top end of their respective side panels results in the planar panel 160 being of between about 30% and 40% greater area than the area of the planar panel 164, hence the planar panel 160 becomes the major top planar panel 14 and the planar panel 164 becomes the minor top planar panel 16 of the gable top of a container erected from the blank. Further, each of the planar panels 160, 164 includes a distal edge 165, 167, respectively, and a fin panel 169, 171 integrally formed with a respective one of said distal edges, as by respective fold lines 173, 175. Upon erection of the blank into a container, these fin panels 169, 171 come together and are bonded in facing relationship to define the fin 48 of the erected container.

[0017] To form the container from the blank depicted in Figure 11, the side walls are formed into a cylinder of rectangular (commonly square) cross section, and the bottom panels are folded and sealed to close the bottom end of the cylinder. Thereafter, the partially erected container is filled with a product, which most commonly is pourable and the top end panels of the first, second, third and fourth side panels are folded to define a gable top geometry which closes the top end of the container. Contrary to the prior art wherein the two planar panels which define the outer top surface of the closed container are of substantially equal widths such that the fin defined by the sealed side margins of these two panels is located centrally of the opposite side walls 40, 43 of the container, in the present container, the two top panels are of different widths such that the wider panel is deemed a major panel 14 and the panel of lesser width is deemed a minor panel 16. When the end margins of these two panels are sealed, the fin 48 is disposed "off center" of the top of the container i.e., laterally spaced apart from the longitudinal centerline 46 of the container (Figure 2). In the present invention, preferably, a pour spout 22 is provided in the minor panel. On the opposite side of the fin and associated with the major panel there is anchored the handle 24 of the present invention.

[0018] From the several Figures, it will be recognized that the location of the handle of the present invention provides for ready grasping and holding of the container with one hand, and further provides a means by which the container, while so grasped in a single hand, may be selectively tilted to allow the contents of the container to flow out of the container via the pour spout under well-controlled conditions.

[0019] In this respect, it is noted that the handle of the present container is mounted on the major panel 14 which itself defines an angle "A" of less than about

60 degrees, and preferably between about 25 and about 45 degrees with respect to the longitudinal centerline 46 of the container. Thus, when the handle is grasped in one hand, the center of gravity of the filled container shifts to position the longitudinal centerline of the container at an angle of between about 20 and about 25 degrees with respect to the vertical. Inasmuch as most containers are not filled to their full capacity, this angle of inclination of the container is insufficient to cause the contents of the container to immediately pour from an open pour spout disposed on the minor panel of the gable top. However this angle of inclination is sufficiently great as permits the container to be further tilted relative to the vertical to controllably pour contents from the container via the pour spout.

[0020] In one alternative embodiment of the present invention, the handle 24 may be provided with a planar base 92 such as depicted in Figures 13-15. In this embodiment of the handle, the blank 100 is provided with a rectangular opening 90 through the thickness of the major planar panel 14 as depicted in phantom in Figure 11 and in perspective in Figure 13. When the container is erected with its top end 20 open, the handle and its base is inserted into the interior of the container and the handle is passed through the opening in the major planar panel so that the handle projects outside the container as seen in Figure 13. The base 92 is sized to be larger than the size of the opening 90 so that the perimetral margin 94 of the base engages the perimetral margin 96 of the opening 90 in position for the base to be sealed to the interior surface 98 of the major planar panel 14 along the perimetral margin 96 of the opening, as depicted in Figures 13 and 15, thereby closing the opening and anchoring the handle in its attitude outside the container.

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[0021] Among the many advantages provided by the handled container of the present invention is the ability to package multiple ones of the handled containers within a shipping case while exposing the handle of each of the cased containers in ready position for one to grasp a handle of a single container and withdraw the single container from the shipping case without having to move or otherwise manipulate the containers within the case to permit the grasping of the container

by its sides or gable top. Aside from the ease of grasping of the container, the lack of any need to grasp the gable top itself materially reduces the possibility that grasping of the gable top itself may force the container to open with resultant spillage or contamination of the container contents.

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[0022] Whereas specific examples have been provided for the handled container of the present invention, it will be recognized that modifications or alternatives are available and will be recognized by one skilled in the art. Thus, the invention is intended to be limited only by the Claims appended hereto.

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